METHOD AND SYSTEM FOR CREATING A VIRTUAL TELEVISION NETWORK

FIELD OF THE INVENTION

The present invention is directed to method and system for creating a video signal, with updated information content, for broadcast over a cable channel. The present invention is also directed to a method and system for creating an alert for broadcast over a plurality of channels.

BACKGROUND OF THE INVENTION

At present, many cable television systems include a government access channel, which broadcasts messages to the subscribers served by each particular cable system. In many cases, the quality of the content presented on the government access channels is unsophisticated, and not current. This situation is due in large measure to the high cost typically associated with generating broadcast-quality content, and the fact that most government access channels have limited financial resources to spend for generating content. The present invention provides a solution to this problem, by offering local municipalities a low-cost system for generating and constantly updating high quality content for broadcast on government access channels. It will be readily apparent that the invention also has applicability beyond government access channels, and may be readily employed in other broadcasting environments where low-cost, high quality video content is desired.

SUMMARY OF THE INVENTION

The present invention is directed to a method for creating a video signal, with updated information content, for broadcast over a cable channel. A series of content pages are created using a first graphical user interface. The series of content pages is

then delivered to a player located at a cable system provider. Updated content is automatically forwarded to the player over the internet by fetching the updated content from an on-line content source and forming an updated content page. The on-line content source is unaffiliated with the party delivering the series of content pages to the player

5   nor is it the cable system. An updated content page is broadcast as a video signal over the cable channel. The present invention also includes a system that accomplish this method.

The present invention is also directed to a method for issuing an alert over a plurality of channels selected from the group consisting of cable channels, over the air

10   broadcast stations, direct broadcast satellite channels, and public and private closed-circuit video networks. Content pages are created using one or more first graphical user interfaces and then delivered over the internet to a plurality of players at a plurality of channels. A second graphical user interface is provided that allows a user, unaffiliated with a party performing the delivering or the plurality of channels, to create an alert. The

15   alert is then delivered over the internet to an on-line content source affiliated with the user. The alert is automatically forwarded to the plurality of players at the plurality channels, by the players fetching the alert over the internet from an on-line content source affiliated with the user. The alert is broadcast as a video signal over the plurality of channels. The present invention also includes a system that accomplish this method.

20   BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings, which are included to provide further understanding of the invention and are incorporated in and constitute a part of this specification,

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illustrate embodiments of the invention and, together with the description, serve to

explain the principles of the invention.

In the drawings:

Figure 1 illustrates a system used in connection with the present invention;

5   Figures 2A-2E illustrate an exemplary graphical user interface that may be used

for creating a content page in connection with the present invention;

Figures 3A-3F illustrate an exemplary graphical user interface that may be used

for creating an alert in connection with the present invention;

Figure 4 illustrates an exemplary series of content pages that may be used for

10   creating a video signal for broadcast over a cable channel in connection with the present

invention;

Figure 5 is a flow chart illustrating a method of a preferred embodiment of the

present invention; and

Figure 6 is a flow chart illustrating a method of a preferred embodiment of the

15   present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference will now be made in detail to the preferred embodiments of the present

invention, examples of which are illustrated in the accompanying drawings. Wherever

possible, the same reference numbers will be used throughout the drawings to refer to the

20   same or like parts.

Figure 1 illustrates system 100 that may be used to carry out the methods of the

present invention. System 100 includes design module 110, schedule server 120, internet

130, on-line content source 135, alert input unit 140, reporter module 190, network 180,

player 150, cable headend 160 and viewer display unit 170. In the preferred

embodiment, a designer creates a series of content pages using a first graphical user

interface (GUI1) at design module 110. The series of content pages are delivered,

through the internet 130, to player 150 located at a cable system provider. The schedule

5   server 120 controls the time and date schedule for transmission of the series of content

pages to the player 150. Alert messages are created at the alert input unit 140 using a

second graphical user interface (GUI2) and then forwarded through the internet 130, to a

plurality of players 150 located at a plurality of channels. Text messages are also created

at the reporter module 190. Player 150 fetches updated content and alerts via the internet

10   130 from the on-line content source 135 and then forms an updated content page or an

alert using the content from the on-line content source. Player 150 also outputs the series

of content pages and alerts to cable headend 160 that broadcasts the series of content

pages as a video signal over channels 180. Although the system shown in Figure 1

includes hardware for generating and broadcasting content over a single cable channel, it

15   will be understood to those skilled in the art that similar systems could be employed at a

plurality of different cable systems each with, e.g., it own government access channel

having different content, and that on-line content source 135 could be used via the

internet to simultaneously update content, e.g., provide an alert, on all such government

access channels. In one embodiment, software available from Scala, Inc. is used to

20   implement design module 110, schedule server 120, reporter module 190, and player 150.

With reference to Figures 2A-2D, GUI1, located at design module 110, allows a

page designer to create content pages and then assemble the individual content pages into

a series of pages. The page designer first defines the page size and selects the

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background color and format, Figures 2A and 2B, respectfully. Next, the page designer inserts a visual and audio input, Figure 2C. GUI1 allows the page designer to enter text that may include fixed text or date and time text that is later updated by a clock within player 150, Figure 2D. The page designer may also insert a video from a video source.

5   The page designer may place the text outside or over the graphic field, Figure 2E. The page designer assembles the various elements of the content page to complete the page, converts it to digital form and then repeats these steps creating several content pages. The individual content pages are finally assembled to form a series of content pages, Figure 4.

10   The images of a content page, may include a variety of multimedia elements. These elements may include visuals, text, graphical images, animation, video and audio. The design module 110 may insert visuals such as graphical and animated images stored as various file formats. The design module 110 may also insert graphical files from digital cameras or scanners. The video may include digital files from a video source such

15   as a VHS tape recording of community meetings where the audio and video content of the tape is digitized and stored as an electronic file using means known to those skilled in the art. The visual, audio and video sources preferably include information content directed to local and national weather, traffic, employment, beach or ski conditions, and city, county, state and federal government information.

20   While creating a content page using GUI1, the page designer may also enter text comprising a programming code directing the player 150 to access an on-line content source 135, at a designated URL, and to fetch the content over the internet 130. The on-line content source 135 is an entity unaffiliated with the party delivering the series of

content pages over the internet 130 from the design module 110 to the player 150, such as the page designer. It is also unaffiliated with the channel broadcasting the series of content pages as a video signal. The on-line content source 135 preferably includes content sources directed to weather, news, traffic, financial, airport, health, or

5 entertainment information. The on-line content source 135 also preferably includes information sources issuing FEMA alerts, Ambler alerts, Red Cross requests, Homeland Security alerts, and NOAA warning.

The reporter module 190 also provides for inserting information into a content page. A user interface located at the reporter module 190 allows a user to modify the

10 page background, images, text, audio and music files on existing pages. The updated information is delivered to the player 150 via the internet 130.

The series of content pages are then saved as an electronic file. The schedule server 120 delivers the electronic file to player 150 and schedules the broadcast time of the series of content pages on the player 150 to the cable headend 160. This is

15 accomplished by the schedule server 120 sending a job file to player 150, where the job file is comprised of a list of files to be pulled down and played by the player 150. The schedule server 120 also performs a variety of other network management functions.

The method of the present invention provides for the real time updating of the visual, audio and video contents of the series of content pages where the content is

20 fetched from an on-line content source 135 located on a server connected to the internet 130. As discussed above, the series of content pages may include pages with text containing programming codes. The series of content pages are delivered to the player 150, via the internet 130 as an electronic file, where the player is located at the cable

system provider. The player 150 stores the series of content pages as an electronic file. At a user-defined scheduled date and time, player 150 plays the series of content pages. When the player 150, reads a content page containing text, comprising a programming code, directing the player 150 to URL of the designated on-line content source 135, it

5   will automatically retrieve the updated content. The player 150 fetches the updated content by downloading the electronic page, of on-line content source 135, to the player 150 and then delivering it to the cable headend 160. The player 150 fetches the updated content of the on-line content source 135 each time it plays the series of content pages to the cable headend 160. The series of content pages including the updated content page

10   are then broadcast as a video signal over a cable channel.

The method of the present invention also provides for issuing an alert over a plurality of channels where the alert is posted on an electronic page of an on-line source located on the internet 130. The channels include cable channels, over-the-air broadcast stations, direct broadcast satellite channels, and public and private closed circuit video

15   networks. The alert preferably includes information from emergency information sources issuing alerts such as FEMA alerts, Ambler alerts, Red Cross requests, Homeland Security alerts, and NOAA warnings.

The method includes a web based graphical user interface, GUI2. It also includes a database that stores and organized alerts and messages entered with GUI2. With

20   reference to Figures 3A-3F, a GUI2, accessed on the user's browser, allows a user to enter an alert using a web browser located on the alert input unit 140. The method comprises multiple users and multiple clients. After logging into the system in Figure 3A, the user selects the client to direct the alert information from the client administration

screen 310, Figure 3B. The client is comprised of entities that receive emergency notices such as city, county, state and federal government entities, elementary, secondary and post-secondary education entities and hotel, airport, shopping mall, sport venue and cruise ship lines. The user is at least one individual affiliated with an entity that

5   maintains an on-line content source 135 that will issue an alert and post the alert on the internet 130. The user preferably includes employees of the entity issuing the alert or an individual with permission to enter alerts from the entity. Exemplary users include FEMA, federal, state and local governments, Red Cross, Department of Homeland Security and NOAA. The welcome screen 315, Figure 3C, then appears from which the

10   user may select to modify the client information 320, edit the user information 325, modify templates 330, modify the users 335, enter an alert 340 or view the pending alert 345. The client menu screen allows the user to add, edit or select a different client using the client screen 350, Figure 3D. The user menu screen allows the user to edit, remove or assign a user to a selected client using the user screen 355, Figure 3E. The add content

15   menu 360 allows the user to input an alert, Figure 3F. The user may designate the title 362, the start date 364, the end date 366 and the text 368. One the alert is created, the alert input unit 140 then sends the alert to an on-line content source 135 for display as an XML web page on the internet 130.

A series of content pages, including pages with a programming code directed to

20   on-line emergency information sources, are delivered to a plurality of players 150 at a plurality of channels, via the internet 130 as an electronic file. The plurality of players 150 read the programming code directing the players 150 to the URL of the designated on-line source. The on-line content source 135 will contain alert information if a user has

entered an alert at the alert input unit 140 and delivered the alert through the internet 130

to the on-line content source 135. The plurality of players 150 then fetch the alert over

the internet 130 by downloading the electronic page of the on-line content source 135.

The players 150 deliver the alert to the plurality of channels. The players 150 will fetch

5   the alert from the on-line source each time it plays the series of content pages to the

plurality of channels. If on-line source 135 contains no graphics, video, animation or

audio, nothing is delivered to the plurality of players 150. The alert is then broadcast as a

video signal over the plurality of channels.

        The series of content pages, updated content and alerts are delivered over the

10   internet 130 or a virtual private network. For delivery over a virtual private network, the

series of content pages and alerts are encrypted at the designer module 110 and alert input

unit 140, respectfully. The series of content pages and alerts are then delivered over the

internet 130 to the player 150. At the player, the encrypted content is decrypted and

stored at the player for broadcast by the cable headend 160.

15   With reference to Figure 4, an exemplary series of content pages is illustrated

where the pages were created for broadcast over the government access channel of a

cable service provider. Pages 1-5, 11-14 and 16-18 display local town news created from

digital and graphical images and text of press releases and photos. Page 6 illustrates a

video presentation from a public service announcement. Pages 7-8 illustrate text

20   messages displayed over graphical images announcing important community

information. Page 10 displays an Amber alert created by a government official at the

alert input unit 140, delivered to an on-line source and then retrieved by the player 150

for broadcast. Pages 9, 15, 19, 36 and 43 contain audio information. Pages 21, 24, 26, 28

and 30 display weather information retrieved from the web servers of commercial

weather services. Page 35 displays real time traffic information containing live audio and

video from a government traffic control agency or a commercial traffic information

provider obtained from the entity's web server. Pages 37-42 and 43-48 displays graphics,

5   video and audio content obtained from county, state and federal news. The page designer

may input this information at the design module 110 or the player may fetch the

information from the entity's web server. Pages 20, 22, 23, 25, 27, 29 and 31-34 display

a blank screen. These pages are directed to electronic pages, on the internet 130, that

currently do not contain any information. During subsequent broadcasts of the series of

10   content pages, if information has been posted to the electronic page, the information will

appear on the content page broadcast as a video signal over a cable channel.

        With reference to Figure 5, a flow chart is shown illustrating a method of the

present invention for creating a video signal, with updated information content, for

broadcast over a cable channel. In step 5010, a content page is created using a first

15   graphical user interface. The content page includes a programming code directed to an

on-line content source. In step 5020, the step of creating a content page is repeated in

order to form a series of content pages. In step 5030, the series of content pages is

delivered to a player located at a cable system provider. In step 5040, the updated

content is automatically forwarded to the player over the internet by fetching the updated

20   content from the on-line content source and forming an updated content page. The on-

line content source is unaffiliated with the party delivering the series of content pages to

the player nor is it the cable system. In step 5050, the updated content page is broadcast

as a video signal over the cable channel.

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With reference to Figure 6, a flow chart is shown illustrating a method of the present invention for issuing an alert over a plurality of channels selected from the group consisting of cable systems, over the air broadcast stations, direct broadcast satellite channels, and public and private closed video networks. In step 6010, a content page is created using a first graphical user interface. In step 6020, a series of content pages is delivered to a plurality of players at a plurality of channels. In step 6030, a second graphical user interface is provided that allows a user, unaffiliated with a party performing the delivering or the plurality of channels, to create an alert. In step 6040, the alert is delivered to an on-line content source affiliated with the user. In step 6050, the alert is automatically forwarding to the plurality of players at the plurality channels, by fetching the alert over the internet from an on-line content source affiliated with the user. In step 6060, the alert is broadcast as a video signal over the plurality of channels.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes of the invention. Accordingly, reference should be made to the appended claims, rather than the foregoing specification, as indicated the scope of the invention. Although the foregoing description is directed to the preferred embodiments of the invention, it is noted that other variations and modification will be apparent to those skilled in the art, and may be made without departing from the spirit or scope of the invention.